

Release Low Flow Devices

Flows for the Future Program



A release low flow device is one of several types of devices being used to reinstate a small portion of flow to catchments, restoring and improving natural environmental processes and catchment health while supporting sustainable use into the future. Many release devices have been successfully installed across the Eastern Mount Lofty Ranges.

How does a release low flow device work?

A release low flow device differs from the more commonly-installed gravity device by releasing low flows from the dam into the watercourse rather than passing them around the dam into the watercourse. They are solar-powered devices that monitor and record flow events through a control point upstream of a dam. When flow occurs, the system measures flow rate on entry and records the total volume of water that has entered the device at or below the predetermined 'Threshold Flow Rate' ('TFR') for the dam. Flows that are beneath the TFR constitute the 'low flows' (as compared to medium and high flows) and only these are released from the dam following telecommunication between the inlet and a receiver at the dam wall.

The flows are released via a pumped or siphoned pipe installed at the dam wall. The result simulates a natural flow event with low flows continuing downstream below the dam. (Refer to diagram over page.)

In most cases there is little change to annual water storage as a result of low flows being passed from the dam.

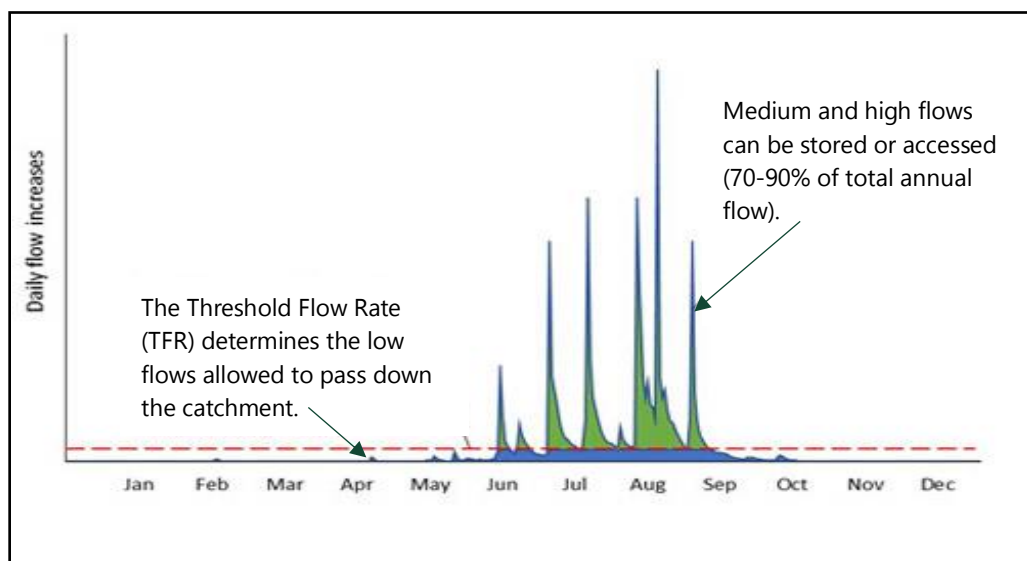


Release low flow devices

- No cost to landholder
- Delivers a small portion of flow back to the waterway
- Dam fills as per normal in medium to high rainfall events
- There are more than 400 sites in the Eastern Mount Lofty Ranges passing low flows.

Figure right.

Threshold Flow Rates determine the low flow portion reinstated to the natural flow path via a device. Medium and high flows remain in the dam.



The mechanics of a release low flow device

Images right. Different styles of weirs used to confine inflow so that it can be measured accurately.

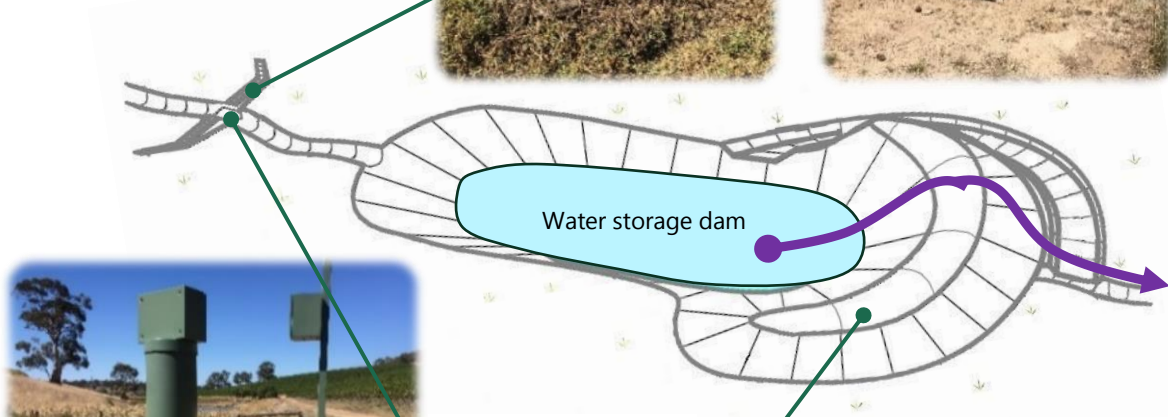


Image left. Measuring water using a sensor and stilling well.

Images below. Signal receiver and either solar-powered siphon or solar pump returning low flows to catchment.



Pumped or siphoned release?

There are currently two versions of release device being used to treat Flows for the Future (F4F) dams.

Pump release system

- TFR no greater than 3.0 L/s
- Suitable for smaller dams
- Suitable for dams with low usage
- Where outlet location is further from dam wall

Siphon release system

- TFR Greater than 3.0 L/s. Up to 10l/s
- Suitable for larger dams e.g. 10MI +
- Space on dam wall for siphon system
- Where a pumped system will not release enough water to keep up with prolonged flow events

Why a release device instead of a gravity device?

Many factors influence the type of device best suited to a dam or property. They include soil type, presence of rock or vegetation, degree of slope, location of property boundaries, number of dams to be treated, sizes of catchments/inflow rates and amenity requirements. There is no one-size-fits-all solution. All low flow devices are carefully chosen to meet the specific needs of the location and landowner.

Contact us to find out more

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